

Garden Orchard and Forest.

THE APPLE WORM.

The apple worm (*Carposaca pomonella*, L.) is the most widely distributed enemy of the fruit from which its name is derived. The annual loss of apples and other pip fruit caused by its insidious working are enormous, amounting during some years, and in certain sections of the country, to fully nine-tenths of the crop. Like many other of our most noxious pests, it is a foreign insect, having been introduced into this section of the country from Europe about the beginning of the present century, and having increased with the spread of horticulture, till at last it is found in the Western territories and on the Pacific coast, where a few years back the apple-grower enjoyed a blessed immunity from its injuries.

The parent moth is prettily marked with bronze, brown, and grey, and is seldom noticed on account of its shy, nocturnal habits; or, when noticed, seldom recognized by the orchardist as the source of his windfalls and wormy fruit. I have proved incontestably that which was very generally surmised by practical men, but doubted by many authors, viz.: the double brooded nature of this insect over a large portion of, if not throughout the United States. The first moths made their appearance with the bursting of the apple blossom, and place their eggs almost invariably at the calyx-end of the young fruit. The greater part of the worms which hatch from these eggs leave the fruit during the month of June in the latitude of St. Louis. These spring up and the course of two or three weeks produce moths which, in their turn, lay eggs, but not so invariably in the calyx end. The worms (second brood) from their eggs leave the fruit, some of them as early as the first of September, others as late as Christmas. In either case they spin their cocoons as soon as they have left the apples, but do not assume the pupa state until towards spring—the moths from the late matured worms appearing almost as early as those from the early matured ones.

When young the worm is whitish, with a black head and a black shield on top of first joint. When full grown, it acquires a flesh-colored or pinkish tint, and the head and shield becomes brown. It may be distinguished at any stage of its growth from all other worms that bore into apples, by its having six horny legs under the middle of the body, and two at the anal extremity. When mature, the larva makes its exit from the fruit and seeks a convenient shelter under which to spin its cocoon. The latter is oval, white within, but disguised outwardly with particles of the substance to which it is attached. Inside of the cocoon the insect changes to a yellowish brown chrysalis, in which state it remains from twelve to eighteen days, at the end of which time the moth issues. In no case does the worm enter the ground.

Our knowledge of the habits of this insect clearly indicates that it was vulnerable only in the larva or chrysalis state. It is obvious that when the eggs are once laid, nothing can save the fruit, and it is equally certain—as careful and repeated experiments have proved—that the moths cannot be lured to destruction to any great extent by lights or quid sweets which prove attractive to many other species. The habit of the worm of spinning up under the first convenient shelter that it finds has, however, suggested a method of trapping, by which the orchardist may practically become master of his foe. This method consists of encircling the trunk of the tree with some bandage which shall form an inviting retreat to the worms. As to the kind, each one will, of course, be guided by what substance he can most cheaply obtain. Of several different materials I have used, the following may be enumerated in what I consider the order of their merit.

1. *Paper Bandage*.—Common straw, wrapping paper, 18x30, can be bought for 60 cents a bundle. Each bundle contains 240 sheets, and each sheet folded lengthwise thrice upon itself will give eight layers, between two and three inches wide, and be of sufficient length to encircle most trees. It is easily drawn round the tree and fastened with a tack, and so cheap that when the time comes to destroy the worms, the bandages containing them may be detached, piled in a heap, and burned, and fresh ones attached in their places. If eight bandages are used to each tree during the season the cost will be just two cents per tree, and the owners could

well afford to treble the number of sheets and keep three on each tree, either together or in different places.

2. *Rags*.—These have very much the same effect as paper, but are more costly and difficult to get the requisite length. Where they can be had cheaply, they may be detached from the tree, scalded with their contents, or passed through the clothes wringer and used again.

3. *The Wire-trap* which has been figured and described in the *Tribune*, and which consists of pieces of shingle screwed to the tree, is perhaps the next convenient, but both the cost and time to destroy the worms are greater than the first two methods, and with traps on the side of a tree can never be so effecting as those which encircle it.

4. *The Lath-belt*, consisting of strips of old sacks, four inches wide, and lined on one side with pieces of lath tacked on transversely and at such a distance from each other that when brought round the tree, they form an almost complete wooded ring, is the very best of all traps, so far as efficiency goes; but it is placed fourth on the list, because of the greater cost and trouble of making, and of destroying the worms when captured.

GLADIOLUSES AND DAHLIAS.

There are few flowers so easily raised, and withal so cheap, and that make a more brilliant show in the garden than gladioluses. They may be bought for from three to five dollars per hundred, mixed sorts, if one is contented to grow the old and better-known sorts—and these are really as fine as any of the newer ones, and they will give as great a diversity of color as can be wished, light and dark red, crimson, scarlet, purple, and so through the lighter shades of red to pure white. They are very effective planted in groups of five or six together, or in beds eight or nine inches apart each way.

They should be planted from early in the season until the middle of June for succession, although the intermediate plantings are apt to have their blooms injured by the sun unless shaded at the time of blossoming. The early and late plantings are, however, all that could be desired, and the ease with which they are kept over winter, in dry sand in a cellar exempt from damp and frost, should commend them to every lover of flowers. They thrive and bloom best in a moist (not wet), rich, sandy loam, but do well in any good garden soil. If very sandy, cow-manure is the proper application to give consistency and enhance the bloom. If thoroughly watered about the time of blossoming with water in which a little ammonia is mixed, it will materially enhance the vividness of the bloom.

Dahlias are of the easiest culture and should find a place in every garden. They require a deep, rich, warm soil, and, if planted the first week in June, will give abundance of bloom during the latter part of summer and through the autumn until frosts come. When planted, a strong stake should be set to each plant to which it should be tied as it increases in growth, and, if the soil is dry, liberal waterings should be given and the ground thoroughly mulched.

These, once obtained, may be kept indefinitely with but little trouble. All that is required is to lift them after they are killed by frost, dry them and pack in dry sand and keep where they will neither be frozen nor become damp. They will continue to give enjoyment thus, year after year.

EVERGREEN TREES IN ORCHARDS.

You are aware, Messrs. Editors and readers of the *Prairie Farmer*, that I have a long time objected to belt planting as a protection to orchard of fruit culture, and that I have advocated the planting of evergreens here and there in and among the orchard. Now I have no desire to place myself in antagonism with or against any advocate of the belt system, but I do know that the influence of an evergreen extends to just about double the distance of its height; and that when placed along there is an ameliorating influence obtained in temperature, both summer and winter; and I also know that a thick belt of evergreens, while it has a sheltering influence for a certain distance, has also an influence tending to draw moisture and miasmatic disease of tree and foliage within a near radius, and especially when the southern line of heat comes most strongly upon it. I could make quotations to prove my position last named, but I have no desire

for controversy, and only seek to induce planting of evergreens in and among orchards indiscriminately, because, when once a fruit-grower has done it, and waited ten years to see its results, I know he will thank me for the suggestion of a good and reliable protection in the matter of orcharding.

F. R. ELLIOTT, in *Prairie Farmer*.

ORCHARD GRASS.

The seeds of orchard grass weigh about twelve pounds to the bushel, and used in connection with other grasses in seeding, from three to five pounds are used. It comes to maturity early, being in blossom with red clover, and if sown with clover in place of timothy, the result would be that both would be in condition to cut at the same time, making a very superior hay. Grown for hay it needs to be cut from the 10th to the 15th of June. While there can be no doubt that it makes a very palatable and very nutritious hay (Prof. Way, the distinguished agricultural chemist of England, having found by an analysis of twenty-three varieties of grasses, that orchard grass exceeded all others except two in albuminous or flesh forming principles) it is as a pasture grass that it is best known, and as such it has characteristics which give it very high rank for its purpose. It succeeds well in the shade, is a very rapid grower, and bears close cropping. All who have had experience with it unite in saying that it produces more pasture than any other grass. It starts very early in the spring, therefore affording a reasonable grazing spot for stock in case the farmer is short of hay, and nearly approaching meadow Fodder in this respect.

Dr. E. Ware Sylvester, of Lyons, N. Y., states in a communication to the Farmers' Club of the American institute, that he has cut tufts of it which were growing in warm situations that would average nine inches in length, while the remnants of snow drifts were still in sight; and tufts from the same location cut early as June, and before the seed had commenced to form, measured four feet nine inches in length, timothy at that time being not half grown. Fed off by cattle it springs up immediately, those who have had most experience with it say it makes good pasturage after one day's rest. Some of our Maine farmers tell us cattle do not like it as hay, and that they will eat June grass in preference to it—but they are either mistaken in the grass, not they are late cut and woolly, and of course not relished by cattle. A steady increase in the demand for the seed has been observable by our seedsmen during the past few years, the Messrs. Libby of this city having sold large quantities of it. To sum up what we have said in regard to it in few words we will again repeat:—Orchard grass starts very early in spring, stands drought exceedingly well, grows very rapidly, bears close cropping, is very nutritious, is very much relished by stock, and will make a continuous meadow.

We are aware the above statements contain nothing new about this now much talked of grass, but if any of our readers have had sufficient experience with it to give an opinion or any new facts about it, we should be glad to hear from them.—*Maine Farmer*.

GRAPE CULTURE IN OHIO.

Of the vineyards on the lake shore and islands, full seven-eighths are Catawba and I should say that nine-tenths of the wine manufactured is of this variety—though there is a considerable amount of Ives and Concord wine made at Cincinnati and other towns in Southern Ohio, and some at Cleveland, Sandusky and Toledo; also, small amounts of Delaware and Norton.

The business of wine making is now carried on with much more of capital and skill than formerly, and, consequently, the product is of better quality and commands readier sale and better prices. This improvement in the domestic wine trade causes an increased demand for good grapes, independent of the fruit markets, and prevents all feeling of discouragement in the minds of those who own vineyards in favorable localities. At the prices paid by wine makers for the fruit, four or five cents per pound, the crop is found to pay better than the average of any other for which the lands are adapted. For table use, also—where the facilities for transportation are good, by

steamboat or freight cars—the grape crop has paid quite well, even at the low average price for the past three or four years.

Some vineyards have entirely failed, as was to be expected, for want of intelligence or care in the choice of land, of its preparation and planting, or in the selection of the varieties of grapes and the management of the vines. It will be seen, by the statistics, that the aggregate is only about one-half as many acres as are planted each year—the balance being offset by vineyards destroyed or abandoned.

Much injury has been sustained, especially by the Catawba and Delaware vineyards, for allowing the vines to overbear; this was particularly the case in the fruitful seasons of 1870 and '71, when many vineyards were allowed to bear as much as five or six tons of fruit to the acre. This so weakened the vines as to induce disease of the foliage, and thus they were unfitted to endure the severe cold of the winter of 1872-'73, which caused destruction of the wood in many vineyards, and the buds in the majority, so that the crop of the past season was not over about one-fourth of the usual average for the entire State, or one-third to a half in the most favored localities.

The Sulphur Remedy.—Much interest was excited at the late annual meeting of our State Horticulture Society, by reports of recent experiments with the use of sulphur on Catawba vineyards at the islands. It was stated by one of the grape-growers from there, that sulphuring the vines had been practiced to some extent for several years past, and that, when judiciously done, it was found a certain preventative of mildew and rotting of the fruit, and also of the blightiness of the foliage; and where this was practiced in 1872, the vines ripened their wood so well as to suffer but little damage from the winter, and thus produced a half crop, while vineyards not sulphured bore no fruit at all. These facts will cause a very general use of sulphur hereafter, and much improvement is expected therefrom.

The practice is to mix sulphur with an equal quantity of fine air-slacked lime, and apply the powder with a bellows, of which they manufacture a very cheap style for the purpose. The first application is made as soon as the blossoms are off in June, and repeated once a month or so during the summer.

The labor and expense are quite small compared with the benefits; and the practice is recommended to grape-growers generally, especially for varieties that are subject to mildew or blighting of the foliage. Let us give the experiment a trial and report the results next year.—M. B. BATEHAM, in *Horticulturalist*.

HORTICULTURAL SOCIETY.

At the summer exhibition of the Toronto Horticultural Society, the quality of plants shown was of a high order of merit, and the number of exhibits must have been highly gratifying to the Committee. It is a great pity we have not had these flower shows more frequently, for what is more enjoyable than to witness a good floral display.

In England every encouragement is given to the cultivation of flowers. Small cottage gardeners hold their fortnightly or monthly shows and in the large cities, especially in London, several exhibitions are held, at which the residents of the crowded courts and streets of the big city, exhibit plants that they have reared in their closely packed homes; they take a pride in these small local exhibitions which is most pleasant to witness. There is scarcely a house, or rather window, in the crowded courts of the poorer parts of that great metropolis, but where flowers may be seen nearly all the year round in great profusion. Surely something might be done in the way of holding small exhibitions in the towns and villages in this country, and whereby a taste for flowers would be cultivated to a greater extent than at present.

CHERRY TREE APHIS.

Will some one please tell us though the *Farmers*, what is known concerning the little black eggs or lice, which are found on the under side of the cherry leaf, causing it to curl, and injuring the fruit on our trees. Cherries in this vicinity have been very much injured by them for several years past, and none of our neighbors have found a remedy. We have not as yet discovered any of the lice this season, but expect them